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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,230	07/06/2000	Dario Barberis	Q-59991	4825

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EXAMINER	
BURCH, MELODY M	
ART UNIT	**PAPER NUMBER**
3683	

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/611,230	Applicant(s) BARBERIS ET AL.	
	Examiner Melody M. Burch	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the presence of both solenoid valve units and pneumatic brake actuators for controlling the solenoid valve units must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Examiner notes that the claim reads as if the solenoid valve units and the pneumatic brake actuators are separate entities, however, on pg. 5 of the specification Applicant describes solenoid valve unit as an example of an electro-pneumatic brake actuator.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 17. Claim 17 recites the limitation "the other transmission line brake control or information signals received on one line" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

The remaining claims are indefinite due to their dependency from one of claims 13 and 17.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12-16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al.

Re: claims 12, 14, 15, and 21. Engle et al. disclose a communication and control system in combination with a railway train which comprises at least one main engine 26 and a plurality of carriages or wagons 30 as shown in figure 1, the communication and control system comprising: first and second bi-directional transmission lines 128,132,130,134 shown in figure 4 and disclosed in col. 6 lines 15-25 which extend parallel to and spaced from one another along the train; a main control 68 installed on the main engine and connected, in the main engine, to both the transmission lines via intervening elements and to brake control systems or devices 76,96 of the train as shown in figure 3; a plurality of slave control units disclosed in col. 6 lines 15-24 and in col. 6 lines 40-41 each of which is installed upon a respective carriage or wagon and is

connected, in the respective carriage or wagon, via intervening elements to both the transmission lines, to valve units included within element 90 associated with pneumatic brake actuators as disclosed in col. 5 lines 39-52 (within one particular carriage or wagon Applicant shows a slave control unit being connected to a singular pneumatic brake actuator. However since Applicant claims a connection of each slave control unit to pneumatic brake actuators (plural), Examiner has interpreted the connections in the respective carriages or wagons as referring to connections in each respective carriage or wagon to the brake actuators and other system devices by way of intervening elements), two sensor devices 72,84 associated with the respective carriage or wagon via element 68, the transmission lines, and other intervening elements; the main control unit and the slave control units being arranged to communicate with one another via the transmission lines according to a predetermined serial protocol as disclosed in col. 6 lines 15-25; the main control unit being arranged to transmit the slave control units brake control signals of serial type, and to receive and acquire information or state signals likewise or serial type from the slave control units via at least one of the transmission lines as disclosed in col. 6 lines 15-24, but does not specifically disclose that the electrically operated valve units are solenoid valve units associated with the brake actuators.

Fujioka et al. teach the well-known use of solenoid valve units associated with brake actuators in col. 9 lines 13-14. Solenoid valves are conventionally used in association with brake actuators for improved switching speeds and widespread availability. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have constructed the brake actuators of Engle et al. with solenoid valve units, as taught by Fujioka et al., in order to provide a means of reliably controlling brake pressure in the brake pipe.

Re: claims 13 and 16. Engle et al. teach in figure 2 the use of a lead or main engine 26 and at least one further auxiliary engine 28, the auxiliary engine 28 being also provided with the control unit 68 capable of acting as a slave unit and arranged to receive synchronization signals coming from the control unit of the lead engine and to transmit information or state signals to the control unit of the lead engine via at least one of the transmission lines.

6. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. as applied to claim 12 above, and further in view of Hsien et al. Hsien et al. teach in figure 2 the use of a control system wherein slave control units 20 disclosed in col. 2 lines 50-51 for the devices 21'-24' are arranged to acquire and transmit signals on one or the other transmission line 31,32 equally, and are moreover operable when they receive a transfer command signal to transfer to the other transmission line signals received on one line, the main control unit 10 being arranged to detect a condition in which the transmission lines 31,32 are both interrupted each between different pairs of slave control units and in such a case to send transfer command signal to at least two slave control units from among those in which there is an interruption of one of the transmission lines in such a way that all the slave control units are able to communicate with the main control units via a provisional transmission line comprising portions of both the transmission lines 31,32 and the slave control units

20 which have been sent the transfer command signal as disclosed in abstract lines 2-4 from the bottom.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the arrangement of Engle et al., as modified, to have included an arrangement, as taught by Hsien et al., in order to provide a level of redundancy in the communication system.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. as applied to claim 12 above, and further in view of GB-2312260. Engle et al. is silent as to how the system is powered. GB-2312260 teaches in figure 1 the use of electrical power supply devices Bat. 1 and Bat. 2 to distribute power.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Engle et al., as modified, with electrical power supply devices, as taught by GB-2312260, in order to provide a means of driving the control system.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. in view of GB-2312260 as applied to claim 18 above, and further in view of Hsien et al. See paragraph regarding the rejections of claims 17 and 19.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. as applied to claim 12 above, and further in view of Hsien et al. and Larsen. Hsien et al. teach a control system comprising the use of lines operable

to transmit electrical power and control signals simultaneously in col. 2 lines 49-53 with regards to the use of power line carrier communication technology and in col. 3 lines 51-53. Larsen teaches in col. 4 lines 62-63 the use of a travelling wave type transmission line.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Engle et al., as modified, to transmit both power and control signals simultaneously, as taught by Hsien et al., in order to reduce the number of lines needed in the system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Engle et al., as modified, to be of the travelling wave type, as taught by Larsen, in order to provide an alternate means of transmitting signals from the main control unit to the slave control units.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the lines of Engle et al., as modified, to be twin wires which is a well-known line construction, in order to provide improved structural integrity of the lines.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claim 12 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of US Patent 6546318 to Barberis et al. in view of US Patent 5835845 to Niki et al. Both the instant application and application 09/804392 claim a communication and control system for a railway train having at least one engine and a plurality of wagons or carriages including first and second bi-directional transmission lines, a main control unit, a plurality of slave control units connected to solenoid valve units, talking between lines via predetermined serial protocol, the receiving and acquiring of signals between the main control unit and the slave control units, but the instant application does not claim the specific detail of the main control unit and the slave control unit talking to one another at one working frequency on one of the lines and a different frequency on the other of the lines. Niki et al. teach in col. 2 lines 60-65 the use of bi-directional transmission lines in which different communication channels correspond to different frequencies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the lines of the instant application to have operated at different working frequencies, as taught by Niki et al., in order to provide a means of assisting in avoiding line communication interference.

R sponse to Arguments

12. Applicant's arguments filed 3/24/03 have been fully considered but they are not persuasive.

Applicant argues that Engle et al. fails to show the limitation of a plurality of slave control units. In another perspective of the Engle et al. reference, Examiner notes that the previously cited col. 6 lines 15-25 in combination with the illustration in figure 1 of a plurality of slave trains 30 implies the presence of a plurality of slave control units or mechanisms by which communication and control procedures (particularly, roll call and indications discussed in col. 6 lines 19-20) with the master locomotive unit takes place. Accordingly, Engle et al. disclose or suggest the limitation of a plurality of slave control units as claimed by Applicant.

With regards to the double patenting rejection arguments, which include arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner notes that it is the combination of the application claim 12 and Niki et al. that teach the invention set forth in claim 1 of the Barberis et al. patent.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 5808370 to Bezos and 4041470 to Slane et al. teach

the use of bi-directional transmission lines in a railway environment, 5777547 to Waldrop, 5551653 to Friebe et al., 4266485 to Bruner et al., 3696758 to Godinez, Jr., 3532228 to Beyer, 3482089 to Raffel et al., 3384033 to Ruff, and 5862048 to Knight teach the use of communication systems between master and slave cars of a railway train. It is noted that the Knight reference shows a single pneumatic brake actuator and sensors connected to each slave car of a train.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb 6/4/03
mmb
June 4, 2003

JACK LAVINDER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600